

Serial No. 09/988,109

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## A P P E N D I X I:

CLAIM AMENDMENTS:

Cancel Claims 8, 41 and 42, amend Claims 1, 5, 11 and 28, and enter new Claim 43 as indicated in the following listing of the claims:

1. (currently amended) A process for producing solid preparations of at least one water-soluble, sparingly water-soluble or water-insoluble active compound suitable for the food and animal feed sectors or for pharmaceutical and cosmetic applications by
  - a) dissolving or dispersing at least one of the abovementioned active compounds in an aqueous molecular dispersion or colloidal dispersion of casein or a caseinate as proteinaceous protecting colloid,
  - b) flocculating the proteinaceous protecting colloid together with the active compound out of the dispersion by setting the pH of the dispersion to a value ~~which is~~ in the a range of the ~~isoelectric point of the protein used as protecting colloid~~ from 4.0 to 5.5,and
  - c) separating off the flocculated solid from the water and any solvents additionally used and subsequently converting them into a dry powder.
2. (original) A process as claimed in claim 1 for producing solid preparations of at least one sparingly water-soluble or water-insoluble active compound suitable for the food and animal feed sectors or for pharmaceutical and cosmetic applications, wherein, in process step a), at least one of the abovementioned active compounds is dispersed in an aqueous molecular dispersion or colloidal dispersion of a proteinaceous protecting colloid.
3. (original) A process as claimed in claim 2, wherein the dispersion step a) is the production of a suspension of at least one solid active compound in an aqueous molecular dispersion or colloidal dispersion of a proteinaceous protecting colloid.
4. (original) A process as claimed in claim 3, wherein the suspension produced in process step a) is ground before the flocculation.

Serial No. 09/988,109

AUWETER et al.

PF 0000051964

5. (currently amended) A process as claimed in claim 2, wherein the dispersion in stage a) comprises the following steps:
- a<sub>1</sub>) dissolving one or more sparingly water-soluble or water-insoluble active compounds in a water-miscible organic solvent or a mixture of water and a water-miscible organic solvent or
  - a<sub>2</sub>) dissolving one or more sparingly water-soluble or water-insoluble active compounds in a water-immiscible organic solvent and
  - a<sub>3</sub>) mixing the solution obtained by a<sub>1</sub>) or a<sub>2</sub>) with an aqueous molecular dispersion or colloidal dispersion of casein or a caseinate as proteinaceous protecting colloid, the hydrophobic phase of the active compound being produced as nanodisperse phase.
6. (original) A process as claimed in claim 5, wherein, when process step a<sub>2</sub>) is being performed, the water-immiscible solvent is distilled off before flocculating the protecting colloid.
7. - 8. (canceled)
9. (original) A process as claimed in claim 1, which involves the production of carotenoid-containing dry powders.
10. (original) A process as claimed in claim 9 for producing dry powders comprising carotenoids selected from the group consisting of astaxanthin,  $\beta$ -carotene,  $\beta$ -apo-8'-carotenal,  $\beta$ -apo-8'-carotenic acid ethyl ester, canthaxanthin, citranaxanthin, echinenone, lutein, lycopene and zeaxanthin.
11. (currently amended) A process as claimed in claim 9, wherein
- a) one or more carotenoids are dissolved in a water-miscible organic solvent, or a mixture of water and a water-miscible organic solvent, at temperatures above 30°C,
  - b) the resultant solution is mixed with an aqueous solution of ~~zein~~, casein or caseinate,
  - c) the ~~zein~~, casein or caseinate is flocculated out of the dispersion together with the carotenoid at a pH of the dispersion ~~which is in the region of the isoelectric point of zein, casein or caseinate~~ a range of from 4.0 to 5.5,
  - d) the flocculated solid is separated off from the water and solvent and dried.

051206

- 4 -

Serial No. 09/988,109

AUWETER et al.

PF 0000051964

12. (original) A solid preparation of at least one water-soluble, sparingly water-soluble or water-insoluble active compound suitable for the food and animal feed sectors or for pharmaceutical and cosmetic applications and obtainable by a process as defined in claim 1.
13. (original) A solid preparation as claimed in claim 12 comprising at least one sparingly water-soluble or water-insoluble active compound suitable for the food and animal feed sectors or for pharmaceutical and cosmetic applications.
14. (original) A solid preparation as claimed in claim 12 having an active compound content of from 0.1 to 80% by weight.
15. (original) A solid preparation as claimed in claim 13 which is a carotenoid-containing dry powder.
16. (original) A dry powder as claimed in claim 15 comprising carotenoids selected from the group consisting of astaxanthin,  $\beta$ -carotene,  $\beta$ -apo-8'-carotenal,  $\beta$ -apo-8'-carotenic acid ethyl ester, canthaxanthin, citranaxanthin, echinenone, lutein, lycopene and zeaxanthin.
17. - 27. (canceled)
28. (currently amended) An oily suspension comprising, as disperse phase, solid preparations of at least one water-soluble, sparingly water-soluble or water-insoluble active compound suitable for the food and animal feed sectors or for pharmaceutical and cosmetic applications which are obtainable by
  - a) dissolving or dispersing at least one of the abovementioned active compounds in an aqueous molecular dispersion or colloidal dispersion of casein or a caseinate as proteinaceous protecting colloid,
  - b) flocculating the proteinaceous protecting colloid together with the active compound out of the dispersion by setting the pH of the dispersion to a value ~~which is~~ in the a range of the ~~isoelectric point of the protein used as protecting colloid~~ from 4.0 to 5.5,and
  - c) separating off the flocculated solid from the water and any solvents additionally used and subsequently converting them into a dry powder.

051206

- 5 -

Serial No. 09/988,109

AUNETER et al.

PF 0000051964

29. (original) An oily suspension as claimed in claim 28 having an active compound content of from 0.1 to 50% by weight, based on the total amount of oily suspension.
30. (original) An oily suspension as claimed in claim 28 comprising as active compound at least one carotenoid selected from the group consisting of astaxanthin,  $\beta$ -carotene,  $\beta$ -apo-8'-carotenal,  $\beta$ -apo-8'-carotenic acid ethyl ester, canthaxanthin, citranaxanthin, echinenone, lutein, lycopene and zeaxanthin.
31. (previously presented) A process for producing a carotenoid-containing oily suspension comprising, as disperse phase, at least one carotenoid selected from the group consisting of astaxanthin,  $\beta$ -carotene,  $\beta$ -apo-8'-carotenal,  $\beta$ -apo-8'-carotenic acid ethyl ester, canthaxanthin, citranaxanthin, echinenone, lutein, lycopene and zeaxanthin, which carotenoid is enclosed by one or more protecting colloids, with the proviso that the oily suspension comprises no water-soluble vitamins, which process comprises
- a) grinding a dry powder comprising the at least one carotenoid enclosed by one or more protecting colloids in at least one oil to a mean particle size of from 0.1 to 100  $\mu$ m or
  - b) grinding a dry powder comprising the at least one carotenoid enclosed by one or more protecting colloids without using a continuous phase to a mean particle size of from 0.1 to 100  $\mu$ m and then suspending the ground particles in at least one oil or
  - c) grinding a carotenoid-containing suspension comprising, as solid phase, the at least one carotenoid enclosed by one or more protecting colloids and, as dispersion medium, water or a mixture of water and a water-miscible solvent to a mean particle size of from 0.1 to 100  $\mu$ m, then freeing the solid phase from the water or water/solvent mixture and suspending the resultant ground particles in at least one oil.
32. (original) A process as claimed in claim 31, wherein the oil is an edible oil liquid at 20°C.
33. (original) A process as claimed in claim 31, wherein the oil is a hard fat solid at 20°C.
34. - 42. (canceled)

051206

- 6 -

Serial No. 09/988,109

AUWETER et al.

PF 0000051964

43. (new) A process for producing solid preparations of at least one water-soluble, sparingly water-soluble or water insoluble active compound suitable for the food and animal feed sectors or for pharmaceutical and cosmetic applications comprising the following steps:

- a<sub>1</sub>) preparing an active compound suspension by suspending at least one of the above-mentioned active compounds with a proteinaceous protecting colloid in a solvent,
- a<sub>2</sub>) grinding the active compound suspension,
- b) flocculating out active compound-proteinaceous protecting colloid particles, and
- c) separating off the active compound-proteinaceous protecting colloid particles from water and any solvents used, and subsequently converting the particles into a dry powder.